Central Valley Project Improvement Act (FY 2000)
INFORMATION ABOUT THE SCOPE OF WORK
Lower Butte Creek Project
East Side Sutter Bypass Small Pumping Plant Screens
Phase II B Small Pumping Plant Scoping and Preliminary Design

1. **Scope of the Project:** The East Side of the Sutter Bypass (East Side) contains all of those lands both inside and outside the Sutter Bypass that rely on the East Borrow Canal for irrigation and flood-up water. The East Borrow Canal begins at the East-West Diversion Weir and continues adjacent to the inside of the east levee of the Sutter Bypass to the point where it joins the Feather River immediately below Lower Sacramento Road at Nelson Slough. This reach of Lower Butte Creek measures approximately 20 miles in length and supplies water to approximately 12,500 acres of farmland and managed wetlands through three large Department of Water Resources pumps and 46 small private pumps. Phase I(b) of the Lower Butte Creek Project identified 43 small pumps in this reach of the Sutter bypass and reported on location and size of each of the pumps. The objective of this grant is to determine the exact location of each of the pumps and characterize the pumping plant site including elevations, cross-sections, pumping plant specifications and annual pumping duration. Additionally, each of the sites will be examined to determine the feasibility of pumping plant consolidation. As part of the consolidation task, rules governing change of diversion points will be researched with the appropriate state agencies. Existing water users must be provided with assurances that their ability to divert water according to water rights or licenses will in no way be diminished by either screening existing diversions or consolidating their diversions with neighboring water users. When pumping plant locations are finalized and accepted by the stakeholders, a set of preliminary engineering plans will be developed for each class of pumping plant including estimated construction costs and annual cost of maintenance and operation.

   General tasks include: 1) Initial stakeholder meetings to finalize the scope of the project. 2) Meet with landowners and to determine location, configuration/consolidation of pumps to be screened; 3) Develop a site plan for each of the proposed sites, including elevations, GPS location, hydrology and pumping plant specifications; 4) Develop a set of preliminary engineering plans including estimated construction costs and annual operation and maintenance cost for each class of pumping plant. (i.e. small, medium and large including consolidated pumping plants).

   The timeframe for the project is: 1) Initial meeting and planning 1/1/00 to 3/31/00; 2) Site consideration/characterization 4/1/00 to 9/30/01; 3) Complete preliminary designs and costs 7/1/00 to 12/31/00. 4) Project Management 1/1/00 to 12/31/00.

   Benefits of the Project:
   Objective:
   Within the Sutter Bypass, reduce or eliminate delay and injury to Butte Creek adult salmon and steelhead and reduce or eliminate entrainment of juvenile Butte Creek and Sacramento River salmon and steelhead and other listed fish species under controlled-flow conditions while maintaining the viability of associated managed wetlands and agricultural operations.

   Related Benefits:
   Improved fish passage through the Sutter Bypass and its associated water control structures is expected to improve the long-term sustainability of natural production of anadromous fish

populations, in particular spring-run chinook salmon and steelhead. Maintaining the viability of associated managed wetlands and agriculture is expected to improve the health and long-term sustainability of waterfowl and other resident species including species of special concern.

2. **Monitoring and Data Evaluation**

The engineering data collected from the tasks described in this proposal will be used by the Sutter Bypass Action committee to design and build the proposed structural modifications and water management system needed to ensure the safe passage of anadromous fish through the east side of the Sutter Bypass. A committee comprised of stakeholder leadership, resource agencies, regulatory agencies, interested non-profits, and consultants will oversee the project and advise the project team on their issues and concerns. With this input the proposed construction projects are expected to be coordinated with on-going Butte Creek restoration projects and meet other watershed objectives and requirements.

Table 1. Summary of ecological/biological objectives, associated hypothesis and monitoring parameters and approaches.

1) Biological/Ecological Objective: Within the Sutter Bypass reduce or eliminate to levels acceptable under ESA/CESA, delay and injury to Butte Creek adult salmon and steelhead and other listed fish species such as splittail. Additionally, reduce or eliminate entrainment to levels acceptable under ESA/CESA, of juvenile Butte Creek and Sacramento River salmon and steelhead and other listed fish species under controlled-flow conditions			
Question to be evaluated/Hypothesis	**Monitoring Parameter and Data Collection**	**Data Evaluation Approach**	**Comments**
Can the East Side of the Sutter Bypass, extending from the E-W Diversion Weir downstream to the Nelson Slough and Willow Slough Weirs be screened, hydraulically configured and operated to minimize ostensible take to a level acceptable under ESA/CESA, of juvenile and adult salmon, steelhead and Sacramento split-tail during controlled-flow conditions?	No monitoring will be required for this phase. Monitoring will be included as part of phase III. Data will be collected to determine size, location and pumping duration for each of 43 identified pumps.	Data collected will be used to determined subsequent pump consolidation and small pump screening projects.	Study Priority and status: High Priority, Included in Existing Plans AFRP Action # 23 and 24 AFRP Evaluation # 15 CALFED EERP 2/99 Species/Species Group: Goal 1, Endangered Species Priority Group 2

3. **Scope of Work and Deliverables:**

Task 1: Project Management

1a. Establish a landowner action committee to review and approve project actions; schedule meetings; record and distribute minutes; coordinate/facilitate committee actions.

1b. Establish technical review committee to review all landowner committee actions for compliance with federal, state and local programs including feasibility of pumping plant consolidation.

1c. Coordinate with Phase I(b) consultant and landowners to develop a final list of pumping plants requiring screens.

1d. Coordinate with other Lower Butte Creek Projects in progress in the Sutter Bypass. (Sutter Bypass West Side Project; Sutter Refuge alternate water supply; Wier #2 upgrade and DWR Pumping Plant Screening Project).

Deliverable: Committee reports including meeting place and times, agendas, meeting minutes and correspondence

Timeframe: January 1, 2000 to December 31, 2000

Task 2: Site identification/characterization

2a. Coordinate with landowners and Phase I(b) consultants to identify and locate proposed pumping plant screening sites. Verify water right and license information for the site.

2b. Develop site specific information for each site showing location, elevation, hydrology, geo-technical information and other pertinent engineering/surveying and pump specification data.

2c. Develop a list of proposed pumping plants and segregate them into size classes including small, medium, large and consolidated.

Deliverables: A technical report for each proposed screening site showing location, elevation, hydrology, geo-technical information and other pertinent engineering/surveying data. A list of proposed pumping plants segregated into small, medium, large and consolidated class sizes.

Timeframe: April 1, 2000 to September 30, 2000

Task 3: Preliminary Design

3a. Using information developed in Phase I, I(b), and Task 1 & 2 above, develop preliminary engineering plans, construction cost estimates, O&M Costs and technical recommendations that meet ESA/CESA and landowner requirements for each class of proposed screen (i.e. small, medium, large and consolidated).

Deliverable: A technical report of preliminary engineering designs for the screen structures/classes identified in Task 1 and 2.

Timeframe: July 1, 2000 to December 31, 2000

4. **Budget-** Listed below in tabular form in Table 2 is the Project budget with a breakdown into the following categories: 1) direct labor hours; 2) direct salary and benefits; 3) overhead and indirect costs; 4) service contracts; 5) material and acquisition costs; and, 6) Miscellaneous and other direct costs. Table 3 contains a quarterly breakdown of the Project costs.

Table 2 - Example cost breakdown table

Project Phase and Task	Direct Labor Hours	Direct Salary and Benefits	Overhead Labor (General, Admin. And fee)	Service Contracts	Material and Acquisition Contracts	Misc. and other Direct Costs	Totals
Task 1 task1a/b. task 1c.				45000			45000
Task 2: task 2a/b.				100000			100000
Task 3: task3a				50000			50000
TOTAL				195000			195000

Table 3 - Sample quarterly budget

Task	Quarterly Budget Jan-Mar 00	Quarterly Budget Apr-Jun 00	Quarterly Budget Jul-Sep 00	Quarterly Budget Oct-Dec 00	Total Budget
Task 1:	15000	10000	10000	10000	45000
Task 2:		50000	50000		100000
Task 3:			25000	25000	50000
TOTAL	15000	60000	85000	35000	195000